

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

WALTER M. DICKIE, M.D., Director

Weekly Bulletin



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February 6, 1937

GUY P. JONES
EDITOR

Plain Diphtheria Toxoid Preferred

W. H. KELLOGG, M.D., Chief, Bureau of Laboratories.

Opinion concerning the comparative value of the "one shot" treatment with alum-precipitated toxoid and two injections with plain toxoid, has been divided with the weight of numbers on the side of the one shot of alum-precipitated toxoid.

The reason for this preference has been largely that of convenience and economy, but arguments of greater efficacy also have been advanced based upon the fact that a very high percentage of negative Schick reactions are obtained within six weeks or two months after its administration.

It now appears that this immunity is, in a considerable percentage of persons, short lived as shown by actual antitoxin determinations. A negative Schick test is supposed to depend upon the presence of antitoxin in the blood and the amount necessary to give a negative result originally stated by Schick to be one-thirtieth unit per cc. is apparently correct judging by the fact that the Schick and the Kellogg tests parallel exactly in persons who are naturally immune. It has been found, however, that persons who have been actively immunized, sometimes give a negative Schick and a positive Kellogg. The discrepancy occurs not on the first test after immunization, which usually agrees, but after a lapse of several months. This shows that these persons have lost a considerable amount of their antitoxin and no longer have an anitoxic immunity although the Schick continues negative.

The evidence, therefore, is that under certain circumstances (in the artificially immunized) a negative Schick does not depend upon antitoxin in the blood but is due to altered behavior of the tissue cells in the presence of toxin.

Such authorities as Jensen hold that Schick negative persons who have no antitoxin in their blood are unprotected and account for the not uncommon occurrence of diphtheria in Schick negative persons. The determination of the existence of antitoxin in the blood in protective amount is, therefore, the surest means of evaluating any method of active immunization.

By reason of the fact that one of the State institutions, the Sonoma State Home, has for a long time, sent blood specimens to the State Laboratory from all new entrants, to be subjected to the Kellogg test, opportunity for this study was presented. Those found positive were immunized and later their bloods were collected and sent in for another test. Thus, the actual immune status of a number of persons who have been given one injection of alum precipitated toxoid has been obtained.

This record shows that the value of the "one shot" method has been overrated because of the results judged by the Schick test and the too early check-up.

My records are given herewith, divided into five groups representing different periods of time, three of the groups being composed of persons tested and

found immune at the end of six weeks and tested again in six months. The remaining two groups were tested only at the end of six months.

Group A—Negative in six weeks, positive in six months	8
Negative in six weeks, negative in six months	34
Total	42
Percentage of lost immunity	19
Group B—Negative in six weeks, positive in six months	12
Negative in six weeks, negative in six months	41
Total	53
Percentage of lost immunity	22.6
Group C—Negative in six weeks, positive in six months	16
Negative in six weeks, negative in six months	25
Total	41
Percentage of lost immunity	39
Group D—Positive after six months	25
Negative after six months	41
Total	66
Percentage of failures	38
Group E—Positive after six months	28
Negative after six months	63
Total	91
Percentage of failure to secure immunity	30.7
Grand total	293
Total failure in whole group	89 or 30.3%

CONCLUSION

One injection of alum-precipitated toxoid produces a high percentage of immunity in a comparatively short time, but this immunity, in 30 per cent of the cases on the average, has been lost in six months. In individual groups possibly dependent on such factors as quality of the product, as high as 39 per cent of failures has resulted. Since other competent investigators, notably, Fitzgerald of Toronto, have reported a much better record for the use of plain toxoid in two injections, the conclusion is inescapable that the one dose treatment with alum-precipitated toxoid should be discontinued, and instead *two* or preferably three doses of plain toxoid, spaced at least two weeks apart, given.

DENGUE, 1934-1935

In 1934 two cases of this disease were reported in San Francisco. These are the first cases reported to have originated in Northern California. While clinically they were typical of dengue there is the disturbing factor that as far as is known no mosquitoes known to transmit the disease have been found in the vicinity of San Francisco. The cases were reported in detail in the Arch. Int. Med. Vol. 56: 1067-1096, Dec. '35 by Dr. G. Cheney.

Cases previously reported are:

1922—3 cases were reported in Southern California and imported from the epidemic area in Texas.

1929, 3 cases; 1932, 1 case; 1933, 1 case. All these were reported in Southern California and the diagnosis may be open to some question.

COCCIDIOIDAL GRANULOMA, 1934-1935

Since the publication of Special Bulletin No. 57 by the California State Department of Public Health in 1931 nothing further has been reported on coccidioidal granuloma. This report will serve to revive and bring the data up to date (July 1, 1936).

The general trend of the epidemiology of this disease remains the same as discussed in the Special Bulletin.

Four hundred and fifty cases with two hundred and twenty-four deaths were recorded to July 1, 1936. Table I is a tabulation of the cases and deaths by years:

TABLE I

Distribution of Coccidioidal Granuloma in California Cases and Deaths by Years

Year	Cases	Deaths
Prior to 1928	151	86
1928	36	10
1929	46	25
1930	22	11
1931	19	8
1932	19	9
1933	54	25
1934	49	29
1935	28	14
1936 to July 1	26	7
Total	450	224

Geographically these cases are distributed according to Table II. The concentration of cases still persists in central and southern California. Three hundred and one cases or 66.8 per cent of the four hundred and fifty cases recorded are from Fresno, Kern, Kings, Tulare and Los Angeles counties.

The northern rural counties have never reported cases and it would appear that the disease has certain geographic limits. Since the first large group of cases were reported (prior to 1928) from San Francisco as a medical diagnostic center, only eight cases have been recorded in nine years. Other cases which have been diagnosed in San Francisco have been transferred to the home address or to the most probable source of infection obtained from the detailed history.

A study of the cases according to age and sex (See Table III) shows that males are the most often affected with 384 or 85 per cent of the four hundred and fifty cases occurring in this sex. Sixty-one cases or 13.3 per cent are recorded in females and five were of unknown sex. Three cases have been reported under one year of age and seventeen cases (3.7 per cent) in the one to four age group. However, the majority fall in the higher age groups with a total of two hundred and seventy-five cases or 61 per cent occurring between the ages of twenty-five and fifty-five years.

TABLE II
Sex and Age

Age	Male	Female	Unknown	Total
0-1	1	2	--	3
1-4	13	3	1	17
5-9	10	4	--	14
10-14	5	2	--	7
15-19	17	4	--	21
20-24	45	11	--	56
25-34	129	15	--	144
35-44	80	7	--	87
45-54	40	4	--	44
55+	30	8	--	38
A.	13	1	--	14
Unknown	1	--	4	5
Total	384	61	5	450

Table IV is a summary of cases according to occupation and sex. The occupations were grouped under the general headings: soil, vegetation, animals, general labor (when no specific type was noted), laboratory infection and miscellaneous. The latter group included professionals (students) commercial business, mechanical trades, building trades and others. Two other groups were listed *i.e.* unknown occupations and no occupation. Under the heading vegetation was included housewives—since their work brought them into close contact with fruits and vegetables. Seventy-eight patients were found to have work pertaining to the soil; one hundred and one with fruits, vegetables, cotton and other vegetation; one hundred were general laborers; one hundred and sixteen cases were grouped under the miscellaneous heading; twenty-nine were of unknown occupation and nine had no occupation.

65.5 per cent of the cases were found in the groups involving outside work or work involving soil, vegetation, animals and general outdoor labor. The epidemiology theory that the disease is soil borne as expressed by the high per centage of male outdoor workers has been proved correct since Stewart and Meyer isolated the fungus (*coccidioides immitis*) from soil samples collected in Kern County.

TABLE III
Occupation

Type	Male	Female	Unknown	Total
Soil (oil, mines)	78	0	0	78
Vegetation (housework)	64	37	0	101
Animals	16	0	0	16
General laborer	100	0	0	100
Laboratory	1	0	0	1
Miscellaneous:				
Professions and school	21	6	0	27
Children	25	11	1	37
Commercial business	5	1	0	6
Mechanics	19	0	0	19
Building trades	12	0	0	12
Others	12	3	0	15
Unknown occupation	24	1	4	29
No occupation	7	2	0	9
Total	384	61	5	450

The cases are tabulated in Table IV according to nationality with number and percentage given. Practically all races are affected and the per cents for each have remained quite constant since the first tabulation in 1931. There are, however, variations *i.e.* the foreign-born whites have decreased slightly, whereas the percentage of cases among Filipinos has doubled during the past five years. The explanation of this increase is not evident from the epidemiological histories. Occupation probably plays a part as the majority of Filipinos in California are engaged in agricultural work in localities where the highest percentage of cases occur.

It has been noted that when the medical profession becomes interested in a particular disease then the morbidity reports increase. This undoubtedly has had an influence on the increase in the number of cases of coccidioidal granuloma reported.

Early diagnosis of pulmonary cases and differential diagnosis from tuberculosis by sputum examination have been important steps during the last few years.

TABLE IV

Nationality	Number	Per cent
American (white)	135	30.00
Mexican	96	21.33
Filipino	67	14.90
Negro	61	13.60
Foreign born (white)	36	8.00
Japanese	9	2.00
Chinese	8	1.80
Portuguese	8	1.80
Hindu	4	.89
Indian	3	.66
East Indian	1	.22
Malayan	2	.44
Unknown	20	4.44
Total	450	100.00

MORBIDITY

Complete Report for Following Diseases for Week Ending
January 30, 1937

Chickenpox

709 cases: Alameda County 10, Alameda 5, Berkeley 8, Hayward 2, Oakland 23, San Leandro 1, Butte County 1, Chico 5, Contra Costa County 2, Pittsburg 3, Fresno County 20, Fresno 13, Reedley 2, Humboldt County 14, Eureka 2, Imperial County 3, El Centro 1, Kern County 6, Kings County 3, Los Angeles County 40, Burbank 2, Claremont 1, Glendale 6, Huntington Park 3, Inglewood 1, La Verne 1, Long Beach 28, Los Angeles 94, Pasadena 12, Pomona 3, Redondo 3, San Gabriel 2, San Marino 6, Santa Monica 3, South Pasadena 2, Whittier 3, Lynwood 5, Hawthorne 1, South Gate 4, Signal Hill 2, Maywood 1, Madera County 4, San Anselmo 5, San Rafael 7, Merced County 1, Monterey County 3, Carmel 9, Monterey 1, Salinas 1, Grass Valley 1, Orange County 4, Anaheim 2, Fullerton 2, Huntington Beach 1, Santa Ana 10, Colfax 1, Riverside County 15, Corona 5, Riverside 13, Sacramento 17, San Bernardino County 3, Colton 1, Ontario 4, Redlands 21, San Bernardino 5, San Diego County 11, Chula Vista 13, National City 2, Oceanside 4, San Diego 31, San Francisco 66, San Joaquin County 17, Lodi 1, Stockton 6, San Mateo County 4, Burlingame 1, Daly City 3, South San Francisco 1, Santa Barbara County 4, Santa Barbara 6, Santa Clara County 10, Gilroy 1, Palo Alto 3, San Jose 4, Sunnyvale 1, Santa Cruz County 1, Watsonville 2, Sonoma County 1, Stanislaus County 7, Modesto 9, Tulare County 6, Lindsay 4, Visalia 3, Ventura County 3, Santa Paula 1.

Diphtheria

34 cases: Oakland 2, Fresno County 2, Fresno 1, Imperial County 1, Kern County 1, Los Angeles County 2, Los Angeles

8, Orange County 2, Sacramento 2, Chino 1, National City 1, San Diego 3, San Francisco 2, Stockton 1, Santa Barbara County 2, Yuba City 2, Porterville 1.

German Measles

25 cases: Alameda County 1, Colusa County 1, Contra Costa County 1, El Cerrito 1, Fresno County 1, Humboldt County 2, Eureka 6, Huntington Park 1, Long Beach 1, Santa Monica 1, Sacramento 1, San Diego County 1, San Francisco 6, California 1.*

Influenza

10,884 cases: Alameda County 4, Berkeley 191, Hayward 1, Livermore 2, Oakland 68, Butte County 61, Chico 15, Gridley 7, Calaveras County 2, Angeles Camp 1, Contra Costa County 30, Concord 26, El Cerrito 3, Hercules 13, Pinole 20, Richmond 11, El Dorado County 1, Placerville 7, Fresno County 256, Fresno 308, Selma 7, Parlier 17, Orland 85, Humboldt County 1, Eureka 2, Imperial County 2, Westmoreland 5, Kern County 543, Bakersfield 15, Taft 34, Kings County 202, Hanford 102, Lemoore 89, Los Angeles County 430, Alhambra 14, Arcadia 4, Beverly Hills 1, Burbank 5, Claremont 10, Compton 3, Covina 1, Culver City 8, El Monte 28, El Segundo 13, Glendale 65, Hermosa 1, Huntington Park 28, Inglewood 6, La Verne 3, Long Beach 280, Los Angeles 1536, Manhattan 1, Monrovia 36, Montebello 11, Pasadena 114, Pomona 26, San Fernando 34, San Gabriel 6, San Marino 44, Santa Monica 9, Sierra Madre 3, South Pasadena 7, Whittier 49, Torrance 12, Lynwood 7, Hawthorne 1, South Gate 15, Monterey Park 2, Maywood 17, Bell 5, Gardena 4, Madera County 349, Madera 250, Chowchilla 15, San Rafael 1, Merced County 9, Monterey County 12, King City 13, Monterey 4, Pacific Grove 1, Salinas 4, Napa County 53, Calistoga 3, Napa 125, Grass Valley 113, Orange County 91, Anaheim 91, Brea 9, Fullerton 97, Huntington Beach 2, Newport Beach 23, Orange 32, Santa Ana 132, La Habra 15, Laguna Beach 30, Placentia 14, Tustin 4, San Clemente 1, Placer County 14, Colfax 6, Riverside County 33, Corona 12, Riverside 19, Sacramento County 1, Sacramento 626, San Bernardino County 161, Chino 7, Colton 1, Ontario 123, Redlands 47, San Bernardino 3, Upland 16, San Diego County 160, Chula Vista 1, Coronado 2, El Cajon 17, Escondido 10, La Mesa 36, National City 5, San Diego 54, San Francisco 743, San Joaquin County 2, San Luis Obispo County 136, Arroyo Grande 21, Paso Robles 17, San Luis Obispo 167, San Mateo County 22, Burlingame 38, Daly City 8, Hillsborough 13, San Bruno 3, San Mateo 33, South San Francisco 36, Santa Barbara County 22, Lompoc 30, Santa Maria 12, Santa Clara County 141, San Jose 151, Sunnyvale 7, Santa Cruz County 76, Watsonville 33, Siskiyou County 1, Solano County 13, Vallejo 1, Vacaville 27, Sonoma County 235, Stanislaus County 1, Turlock 398, Sutter County 10, Yuba City 8, Tehama County 4, Tulare County 23, Exeter 33, Lindsay 9, Taft 21, Visalia 130, Sonoma 2, Ventura County 107, Oxnard 13, Santa Paula 7, Ojai 2, Yolo County 88, Woodland 3, Yuba County 97, Marysville 49.

Malaria

2 cases: Callexico 1, San Diego 1.

Measles

67 cases: Alameda 4, Berkeley 1, Fresno 1, Orland 1, Humboldt County 1, Eureka 1, Los Angeles County 2, Glendale 3, Hermosa 1, Long Beach 3, Los Angeles 5, Pasadena 3, Lynwood 1, Merced County 11, Los Banos 6, Grass Valley 3, San Bernardino County 1, San Diego 8, San Francisco 5, South San Francisco 1, Sutter 1, Exeter 1, Porterville 1, Winters 2.

Mumps

787 cases: Alameda County 3, Alameda 8, Berkeley 16, Livermore 1, Oakland 3, San Leandro 2, Contra Costa County 4, Hercules 1, Pinole 1, Pittsburg 9, Fresno County 14, Fresno 4, Orland 6, Humboldt County 8, Eureka 9, Imperial County 4, El Centro 8, Imperial 3, Kern County 16, Kings County 5, Hanford 1, Los Angeles County 26, Alhambra 1, Beverly Hills 4, Glendale 8, Hermosa 1, Huntington Park 3, Long Beach 2, Los Angeles 43, Pasadena 12, Redondo 1, Santa Monica 5, South Pasadena 1, Whittier 1, Lynwood 4, South Gate 2, Maywood 1, Bell 1, Madera County 1, Madera 3, Merced County 2, Los Banos 1, Monterey County 6, Salinas 2, Orange County 2, Newport Beach 1, Orange 4, Santa Ana 34, Tustin 2, Placer County 3, Lincoln 4, Riverside County 23, Riverside 87, Sacramento County 1, Sacramento 5, San Bernardino County 8, Colton 1, Ontario 9, Rialto 3, San Bernardino 135, San Diego County 3, Coronado 2, National City 17, San Diego 51, San Francisco 57, San Joaquin County 6, Stockton 16, San Mateo County 1, Daly City 1, Lompoc 1, Santa Clara County 7, Stanislaus County 2, Sutter County 4, Red Bluff 3, Tulare County 2, Lindsay 1, Ventura County 18, Fillmore 1, Santa Paula 4, Yolo County 2, Woodland 5, Yuba County 1, California 5.*

Pneumonia (Lobar)

278 cases: Berkeley 4, Emeryville 1, Oakland 8, Amador County 2, Chico 1, Calaveras County 1, Colusa 2, Richmond 4, Fresno County 2, Humboldt County 3, Eureka 5, Bakersfield 2, Taft 1, Lake County 2, Los Angeles County 21, Alhambra 2, Azusa 1, Claremont 1, Compton 1, El Monte 1, Glendale 1, Glendora 1, Huntington Park 1, Long Beach 3, Los Angeles 87, Pasadena

10, Pomona 1, Redondo 1, San Fernando 3, Lynwood 1, Hawthorne 1, South Gate 1, Maywood 1, Madera County 2, Madera 2, Napa County 2, Napa 3, Grass Valley 1, Santa Ana 3, Riverside County 6, Corona 2, Riverside 3, Sacramento County 3, Sacramento 6, Ontario 1, Redlands 2, San Bernardino 1, La Mesa 1, San Diego 10, San Francisco 35, San Luis Obispo County 2, South San Francisco 4, Santa Barbara County 1, Lompoc 3, Santa Maria 1, Siskiyou County 1, Petaluma 1, Stanislaus County 2, Tuolumne County 1, Ventura County 1, Yuba County 1.

Scarlet Fever

355 cases: Alameda 1, Berkeley 3, Oakland 13, Butte 7, Chico 7, Gridley 1, Colusa County 1, El Cerrito 2, Richmond 2, El Dorado County 2, Placerville 1, Fresno County 15, Fresno 8, Humboldt County 8, Arcata 3, Eureka 1, Imperial County 1, Kern County 17, Bakersfield 1, Taft 1, Kings County 1, Los Angeles County 12, El Segundo 3, Long Beach 5, Los Angeles 44, Monrovia 1, Pasadena 3, Pomona 1, Santa Monica 1, Torrance 1, South Gate 1, Monterey Park 1, Madera County 2, Mariposa County 3, Merced County 4, Merced 3, Monterey 1, Pacific Grove 3, Napa County 8, Napa 4, Orange County 1, Orange 2, Placer County 13, Colfax 9, Riverside County 3, Corona 1, Riverside 2, Sacramento County 1, Sacramento 19, San Bernardino 1, San Diego County 4, San Diego 3, San Francisco 23, San Joaquin County 1, Stockton 3, San Bruno 2, Lompoc 6, Santa Barbara 2, Santa Clara County 4, Gilroy 3, Palo Alto 2, San Jose 7, Santa Cruz County 3, Shasta County 6, Redding 1, Siskiyou County 1, Dunsmuir 2, Vallejo 4, Sonoma County 2, Healdsburg 1, Stanislaus County 2, Ceres 1, Turlock 1, Red Bluff 2, Tulare County 11, Tuolumne County 1, Ventura County 1, Fillmore 1, Yolo County 6.

Smallpox

13 cases: Los Angeles County 2, Burbank 1, Los Angeles 1, Riverside County 6, Riverside 2, San Diego 1.

Typhoid Fever

8 cases: Firebaugh 1, Callexico 1, Glendale 1, Los Angeles 2, Fullerton 2, Ventura County 1.

Whooping Cough

288 cases: Alameda County 1, Alameda 1, Berkeley 3, Oakland 6, Fresno County 13, Fresno 6, Selma 1, Imperial County 1, Westmoreland 1, Kings County 1, Los Angeles County 25, Alhambra 1, Burbank 3, Glendale 3, Huntington Park 1, Inglewood 1, Long Beach 3, Los Angeles 59, Montebello 2, Pasadena 11, Santa Monica 11, South Pasadena 1, Whittier 4, South Gate 3, Madera County 5, Madera 4, Grass Valley 1, Orange County 6, Laguna Beach 1, Riverside County 11, Corona 7, Riverside 4, Sacramento 2, Redlands 1, San Bernardino 10, San Diego County 4, San Diego 3, San Francisco 11, San Joaquin County 1, San Luis Obispo County 1, Daly City 1, South San Francisco 1, Belmont 2, Santa Barbara County 4, Santa Maria 3, Stanislaus County 3, Tehama County 1, Tulare County 6, Exeter 16, Visalia 4, Ventura County 5, Fillmore 4, Yolo County 4.

Meningitis (Epidemic)

10 cases: Oakland 1, Butte County 1, Los Angeles County 1, Los Angeles 3, San Bernardino 2, Stanislaus County 1, Modesto 1.

Dysentery (Amoebic)

One case: Long Beach.

Dysentery (Bacillary)

6 cases: Los Angeles 4, San Bernardino County 1, Burlingame 1.

Pellagra

One case: Los Angeles.

Poliomyelitis

2 cases: Oakland 1, Los Angeles 1.

Trachoma

One case: Kings County.

Encephalitis (Epidemic)

One case: San Francisco.

Food Poisoning

29 cases: Los Angeles 26, San Francisco 2, Lompoc 1.

Undulant Fever

One case: Kern County.

Septic Sore Throat (Epidemic)

8 cases: Alameda 1, Montebello 2, Colton 1, Lompoc 4.

Rabies (Animal)

36 cases: Los Angeles County 5, Compton 1, Glendale 1, Long Beach 1, Los Angeles 18, Manhattan 1, Montebello 1, Pasadena 1, San Gabriel 1, Torrance 2, Monterey Park 1, Orange County 1, San Bernardino 2.

* Cases charged to "California" represent patients ill before entering the state or those who contracted their illness traveling about the state throughout the incubation period of the disease. These cases are not chargeable to any one locality.